## NOTES ON THE FISHERIES OF THE PACIFIC COAST.

ith certainty rbuscha). r corresponds nring the old ing statistical 0 and 1892 the 11. Complete tion at hand he statement, han for five or

1892, inclusive.

f bluebacks in the difference n of the official cell-established ly large, correpreceding the anything more sh in these two r, that 'he fish arge run in one

river fisheries, fish at a given er on the other, wendence of the n the Columbia ith all forms of anticipated and e to the wheels ro was greatest aro very heavy, it the time the ost or seriously

f the Columbia asioned by the s and chinooks ad nets and of chinooks in gill nets was so large, that the shortage was overcome, and the aggregate season's pack was much larger than last year.

Trap fishing in Baker Bay and the lower river was somewhat interfered with by the large amount of driftwood brought down by the freshet. Many of the traps, especially those on the edge of the channel, became clogged or were torn by brush, logs, etc. A few stakes were also washed ont by the high water. Swift enrrents and floating débris also interfered with the setting of gill ness and the hanling of seines.

As is well known, the wheels require a certain amount of high water in order to do well. At the Cascades it is found that the largest quantities of fish are taken when the height of the river is 20 to 25 feet above mean low water. Several explanations of this circumstance are offered. Some hold that more fish are prompted to enter the river when an unusually large volume of fresh water is being poured into the ocean. Mr. Frank M. Warren, who operates wheels extensively and has had much experience in the watter, attributes the larger catch during high water to the fact that the nets in the lower river can not take so many fish and that a larger number are able to reach the wheels. During the prevalence of high water the gill nets in the lower river do not so effectually sweep the bottom, and new channels are made on the sides of the river, up which the fish may pass num-lested. For detailed data showing the relation between the height of water and the catch in wheels, reference is made to the table giving the yield of certain wheels at the Cascades.

The clearness or muddiness of the water has an important bearing on the success of the fishing operations of trap and gill net fishermen. Trap nets always do best when the water is clear, and gill nets take the most fish when the water is muddy. It therefore usually happens that when traps are making large catches the gill nets are likely to have poor luck. The explanation of these phenomena seems to be as follows: In muddy water the salmon swim into the gill nets before becoming aware of the existence or natare of the obstruction; on the other hand the leader of a pound net, with its fine meshes often occluded by grass and other drift material, acts as a solid barrier, and when the salmon swim against it they quickly withdraw and move in other directions. When the water is clear, the fish readily see the gill nets at some distance and do not attempt to go through them, but swim along the side of the nets and go round the ends. In the case of the leaders of traps, the fish act the same way and are led into the nets, the tendency of the salmon being to go into the heart rather than toward the free ends of the leader, for the rease: that the water becomes deeper in the direction of the poeket.

## STURGEON AND THE STURGHON FISHERY.

## CALIFORNIA.

The white sturgeov (Acipenser transmoutanus) is one of the most prominent foodfishes of the State, its edible qualities and economic value being of high rank. The capture of sturgeon for market is practically restricted to San Francisco Bay and the lower reaches of the Sacramento and San Joaquin rivers. The fish is taken with largemeshed gill nots, in salmon nets, and with set or troll lines provided with unbaited, barbless hooks. The principal part of the yield is obtained with set lines. In 1893, for the first time, a license was required for the use of sturgeon set lines. A license ice of \$10 was charged to each fisherman.

275